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(71) Applicant (*for all designated States except US*): HOLTON MACHINERY [GB/GB]; Albany House, Elliot Road, West Howe, Bournemouth BH11 8JH (GB).

(72) Inventors; and
(75) Inventors/Applicants (*for US only*): MADDOCK, Brian [GB/GB]; West Ridge, Corfe Lodge Road, Broadstone, Dorset BH18 9NG (GB). SMITH, Martin, James [–/GB]; 16, Sutherland Avenue, Broadstone, Poole, Dorset BH18 9EB (GB).

(74) Agent: KEMP, Paul, Geoffrey; Batchellor, Kirk & Co., 102–108 Clerkenwell Road, London EC1M 5SA (GB).

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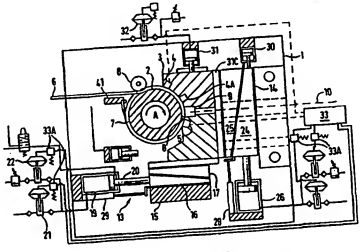
(54) Title: CONTINUOUS EXTRUSION USING DYNAMIC SHOE POSITIONING



(57) Abstract

A continuous extrusion machine has a chassis (1) supporting a wheel (2) for rotation by a motor. An endless groove (7) extends around the periphery of the wheel (2). A shoe (3) is mounted in the chassis (1) and has an enveloping surface shaped to closely envelop an arc of the wheel (2) periphery so that the groove (7) co–operates with the shoe (3) to form a passage. An abutment is mounted on the shoe (3) to extend into the passage at a downstream end. Tooling is mounted in the shoe (3) including a die such that a material such as aluminium or copper bar fed into the groove (7) is extruded through the die as a consequence of the energy transfer via friction from the rotating wheel (2). A gap (12) exists between the enveloping surface and the wheel (2). The gap (12) is used to provide the orifice of a sonic gap (12) sensor whereby the size of the gap (12) can be accurately and directly measured. The gap (12) size sensed is used to control the position of the shoe (3) in two directions mutually perpendicular to the rotary axis of the wheel (2) by adjusting support structures which support th shoe (3). The size and shape of the gap (12) can thus be safely adjusted while the machine is extruding allowing the size and shape of the gap (12) to be adjusted for optimum performance.